

IN THE CLAIMS:

Claim 1. (Currently Amended) A method of determining the presence ~~and flow rate of a leakage from~~ leak condition in a fluid system, comprising:

sensing by a sensor vibrations induced in said fluid system by passage of the fluid through said leakage;

segmenting by a segmentor the sensed vibrations into at least two spectral bands; and

comparing amplitudes of the spectral bands with predetermined values to determine ~~flow rate.~~ a leak condition.

Claim 2. (Original) A method according to claim 1, further comprising attaching a sensor to the fluid system to obtain data therefrom indicative of fluid flow therethrough.

Claim 3. (Original) A method according to claim 2, wherein the sensor includes a piezo-electric material.

Claim 4. (Original) A method according to claim 3, wherein the sensor includes a PVDF film.

Claim 5. (Original) A method according to claim 2, wherein the sensor comprises one of a strain gauge, geophone or hydrophone.

Claim 6. (Cancelled.)

Claim 7. (Currently Amended) Apparatus for determining the presence of a leakage from a fluid system, comprising:

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a vibration sensor for sensing vibrations induced in said fluid system by passage of the fluid through said leakage;

a segmentor for segmenting the sensed vibrations into at least two spectral bands; and

a ~~compariter~~ comparator for comparing amplitudes of the spectral bands with predetermined values to determine ~~flow rate~~. a leak condition.

Claim 8. (Original) Apparatus as claimed in claim 7 wherein the sensor includes a piezo-electric material.

Claim 9. (Original) Apparatus as claimed in claim 8 wherein the sensor includes a PVDF film.

Claim 10. (Previously presented) Apparatus as claimed in claim 8 wherein the sensor comprises one of a strain gauge, geophone or hydrophone.

Claims 11.-12. (Cancelled.)

Claim 13. (Currently Amended) A leakage detection system for use in a fluid carrying system, said leakage detection system comprising:

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at least one sensor mountable to the exterior of a pipe of the fluid carrying system, said sensor comprising a vibration sensor for measuring vibrations in the pipe caused by fluid flow in the pipe and providing output signals indicative of the vibrations;

a processing unit for receiving signals from the at least one sensor and for comparing the received signals with reference data to determine the presence of a leak;

a segmentor for segmenting the sensed vibrations into at least two spectral bands; and

a ~~compariter~~ comparator for comparing the amplitudes of the spectral bands with predetermined values to determine ~~flow rate~~ the presence of a leak.

Claim 14. (Cancelled).

Claim 15. (Previously Presented) Apparatus as claimed in claim 13 wherein the sensor includes a piezo-electric material.

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Claim 16. (Previously Presented) Apparatus as claimed in claim 15 wherein the sensor includes a PVDF film.

Claim 17. (Previously Presented) Apparatus as claimed in claim 15 wherein the sensor comprises one of a strain gauge, geophone or hydrophone.
